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1. Data Set Description:

The missions of the Canadian Forest Service (CFS) Cessna 188 were to support the ground-based measurements at the Slocan Park (SL) site, the Langley Ecole Lochiel (LEL) site, and the Eagle Ridge site on Sumas Mountain (SER). Integration of the measurements on the Cessna with ground measurements was envisioned to provide the vertical chemical and thermal structure of the lowest part of the boundary layer at the sites, and how particle characteristics changes with altitude within the boundary layer. The Cessna flights included profiling and specialized flight patterns. The profiling was made over the sites and at the model boundaries. The profiling provided vertical profiles of O₃, particle number size distribution from 0.12 to and total particle counts, VOCs, and meteorological parameters at these locations. During race-track flight patterns, filters were collected at 50, 100, and 300 m altitudes, for inorganic and OC/EC components. On August 20th, based on forecast forward trajectories, the Cessna flew along the trajectories starting from the LEL site at the 500 m altitude in an attempt to understand the time evolution of particles. Selected data archived at this time are particle number and size distributions, ozone, VOCs, and standard meteorological measurements.

The **Pacific 2001 Air Quality Study** was conducted from 1 August to 31 September, 2001 in the Lower Fraser Valley (LFV), British Columbia, Canada. The study consisted of individual research projects organized to address several issues on ambient particulate matter and ozone that are important to policy makers. The ground sampling sites during the study were (1) Cassiar Tunnel, (2) Slocan Park, (3) Langley Ecole Lochiel, (4) Sumas Eagle Ridge, and (5) Golden Ears Provincial Park and aloft measurements were taken from a Convair 580 and a Cessna 188. Selected measurement data have been compiled for each site and aircraft and are archived as site-specific data sets.

A special issue of Atmospheric Environment [Vol. 38(34), Nov 2004] describes specific study objectives (Li, 2004) and presents a series of results papers from the field study.

The data set should be cited as follows:

Li, Shao-Meng and J. W. Bottenheim. 2004. NARSTO PAC2001 CFS Cessna VOC, Particle Count, Ozone, and Meteorological Data. Available on-line via [NARSTO Data and Information](#) at the Atmospheric Science Data Center at NASA Langley Research Center, Hampton, Virginia, U.S.A.

2. Sample Data Record/Data Format:

Data File Format:

Data files are in the NARSTO Data Exchange Standard (DES) format that is described in detail on the [NARSTO Quality Systems Science Center \(QSSC\) web site](#). The files follow a tabular layout and are stored as ASCII comma-separated values files (.csv). The DES does not rely on row position to identify specific information, but uses a tag to describe the information contained in the row. The DES is a self-documenting format with three main sections: the header contains information about the contents of the file and the data originator; the middle section contains metadata tables that describe/define sites, flags, and other codified fields; and the final section is the main data table that contains key sampling and analysis information and the data values. Descriptions of the standardized metadata fields are also available on the QSSC web site.

Data File Name Syntax:

Pacific 2000 data file names are comprised of nine sections, defined as follows:

1. Archive project: **NARSTO**
2. Study acronym: **PAC2001**
3. Site ID / Aircraft ID: **4-character abbreviation**

Study site and aircraft abbreviations

Abbreviation	Site Name
BNDB	Boundary Bay
CSRT	Cassier Tunnel
GEPP	Golden Ears Provincial Park
LNEL	Langley Ecole Lochiel
LPHS	Langley Poppy High School
SLPK	Slocan Park
SLPS	Slope Study
SMMT	Sumas Mountain
CSNA	CFS Cessna 188
CNVR	NRC-IAR Convair 580

4. Principal Investigator ID: **Initials (3 characters)**

Principal Investigator's initials and affiliation

Initials	Name	Affiliation
AMM	Anne Marie Macdonald	Environment Canada
ANL	Anna Lise Norman	University of Calgary
C-M	Cris Mihele	Environment Canada
DKW	Danny Wang	Environment Canada
FAF	Frank Froude	Environment Canada
GVRD	Greater Vancouver Regional District	Greater Vancouver Regional District
HAB	H. A. Weibe	Environment Canada
J-R	Jochen Rudolph	York University
JRB	Jeff Brook	Environment Canada
JWB	Jan Bottenheim	Environment Canada
KGA	Kurt Anlauf	Environment Canada
LAG	Lisa Graham	Environment Canada
M-M	Mike Mozurkewich	York University
M-S	Mahiba Shoeib	Environment Canada
PCB	Peter Brickell	Environment Canada
R-M	Robert McLaren	York University
S-L	Shoa-meng Li	Environment Canada
S-P	Sara Pryor	University of Indiana
S-S	Sangeeta Sharma	Environment Canada
WOR	Douglas Worsnop	Aerodyne Research Inc.
WRL	Richard Leitch	Environment Canada

5. Measurement activity: **General measurement type**
6. Instrument name or analysis method: **General analysis method**
7. Sampling date with sampling days or flight number:

- **For Ground-based measurements:** The first date in the data file (YYYYMMDD), followed by the letter "D" and the total number of sampling days.
 - Examples:



- 20010801D1 (starting August 1, 2001, total of 1 day)
- 20010815D61 starting August 15, 2001, total of 61 days)
- **For Aircraft measurements:** The first date in the data file (YYYYMMDD), followed by the letter "F" and the flight number for the date.
 - Examples:
 - 20010815F1 (first flight on August 15, 2001)
 - 20010815F2 (second flight on August 15, 2001)

8. Archive data file version number: The file version number starts at "V1". The version number is incremented if the archive data file is replaced.

9. Suffix: .csv (comma separated values)

Archived Data Files

File Name	Browse Plot (PDF)
PAC2001_CSNA_JWB_VOC_CANISTER_Part_1-2_20010817D15_V1.csv	View PART 1-2 20010817D15
PAC2001_CSNA_JWB_VOC_CANISTER_Part_2-2_20010817D15_V1.csv	View PART 2-2 20010817D15
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010814F01_V2.csv	View 20010814F01
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010815F02_V2.csv	View 20010815F02
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010816F03_V2.csv	View 20010816F03
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010817F04_V2.csv	View 20010817F04
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010817F05_V2.csv	View 20010817F05
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010818F06_V2.csv	View 20010818F06
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010818F07_V2.csv	View 20010818F07
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010818F08_V2.csv	View 20010818F08
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010820F09_V2.csv	View 20010820F09
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010820F10_V2.csv	View 20010820F10
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010824F11_V2.csv	View 20010824F11
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010824F12_V2.csv	View 0010824F12
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010824F13_V2.csv	View 20010824F13
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010825F14_V2.csv	View 20010825F14
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010825F15_V2.csv	View 20010825F15
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010830F16_V2.csv	View 20010830F16
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010831F17_V2.csv	View 20010831F17
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010831F18_V2.csv	View 20010831F18
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010831F19_V2.csv	View 20010831F19
PAC2001_CSNA_SML_PART-CNT+O3_PROB+TECO_20010831F20_V2.csv	View 20010831F20

3. References:

Li, Shao-Meng. 2004. A concerted effort to understand the ambient particulate matter in the Lower Fraser Valley: the Pacific 2001 Air Quality Study. Atmospheric Environment, Volume, 38(34), pp. 5719-5731. (Pacific 2001 Special Issue)

4. Contact Information:

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Data Center:

The User and Data Services Office at the Langley Atmospheric Science Data Center is involved throughout the system to monitor the quality of data on ingest, to ensure prompt replies to user questions, to verify media orders prior to filling them, and to ensure that the needs of the users are being met.

If you have a problem finding what you need, trouble accessing the system, or need an answer to a question concerning the data or how to obtain data, please contact the User and Data Services staff.

Telephone: (757) 864-8656
FAX: (757) 864-8807
E-mail: support-asdc@earthdata.nasa.gov
URL: <http://eosweb.larc.nasa.gov>

5. Acknowledgement:

When data from the Langley Atmospheric Science Data Center are used in a publication, we request the following acknowledgment be included: "These data were obtained from the NASA Langley Research Center Atmospheric Science Data Center".

The Langley Data Center requests a reprint of any published papers or reports or a brief description of other uses (e.g., posters, oral presentations, etc.) of data that we have distributed. This will help us determine the use of data that we distribute, which is helpful in optimizing product development. It also helps us to keep our product-related references current.

Please contact us at support-asdc@earthdata.nasa.gov for instructions on mailing reprints.

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